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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,641	06/08/2000	Masahide Maruyama	21778.03800	1033

7590 03/18/2003  
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EXAMINER

CONE, DARIUS N

ART UNIT	PAPER NUMBER
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2854

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/590,641

Applicant(s)

MARUYAMA, MASAHIRO

Examiner

Darius N. Cone

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11, 13, 14 and 16-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11, 13, 14 and 16-20 is/are allowed.
- 6) ☒ Claim(s) 21-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. The Restriction requirement of paper # 7 is hereby repeated and made final.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oonishi et al. (US pat # 5,281,991) in view of lima (US pat # 5,393,149).

With respect to claim 21, Oonishi et al. teach a detection portion disposed on a paper spool 6 around which printing paper 5 is wound. Oonishi et al. also teach a rotation detection device 7, configured to detect rotation of the paper spool for detecting the remaining amount of rolled paper 5 around the spool. While Oonishi et al. teach a detection portion and device, there is no teaching of the detection portion being a bar code and the rotation detection device being an optical sensor configured to read the bar code. lima teaches a detection portion consisting of marks 22 disposed on a paper spool around which a printing paper or ink ribbon 18 is wound, a rotation detection device 34 configured to detect rotation of the paper spool based on periodic detection of the detection portion, where the detection portion is a bar code or mark 22 and rotation

detection device is an optical sensor 32 configured to read the bar code or mark 22. It would be obvious to one ordinary skilled in the art to modify Oonishi et al. by providing the bar codes in the form of optical coded patterns and the optical sensor to read the bar codes as taught by lima to discriminate between various pieces of different information pertaining to the ribbon encoded in the bars. lima also teach that the bar code structure occupies a limited area of the surface of the cartridge, shaft or spool, which allows for a reduction in space.

With respect to claim 22, lima teaches the marks containing discrimination information about the ink ribbon 18 (see col. 5, lines 20-24). It would be obvious to one ordinary skilled in the art to provide discrimination information in the marks to provide suitable information about the sheet quality, printing mode and the like to avoid operational error.

With respect to claim 23, lima teaches a control device configured to calculate the remaining amount of ink ribbon 18 and mark identification unit 36 determines if the ink ribbon 18 is low (see col. 4, lines 15-26). It would be obvious to one ordinary skilled in the art to provide detection of the remaining amount of not used in the printing operation to indicate when additional paper is necessary.

With respect to claim 24, lima teaches rotation sensor 34 activated by the control device 38 if rotation detection does not detect any rotations (see col. 5, lines 40-59). It would be obvious to one ordinary skilled in the art to provide a sensor for determining rotation of the spool to provide other information relevant to the user, such as the quality or type of sheet to be printed upon.

4. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshino et al. (US pat # 5,517,915) in view of Prker (US pat # 5,394,225) and Spurr et al. (US pat # 6,099,178)

With respect to claim 25, Oshino et al. teach a roll holder 4, comprising a roll presser plate 3 configured to engage the roll holder 4 (Figs 21 and 22). While Oshino et al. teach of a roll presser plate 3 for engaging roll holder 4, there is no teaching of a detection sensor configured to detect a portion on an interior portion of a supply spool. Prker teaches optical switching which may be effected on the inside of the donor roll structure 90 by illumination from light source 114 and photoconductive ring 96 (see col. 8, lines 4-5). It would be obvious to one ordinary skilled in the art to modify Oshino et al. to include the optical switching sensor of Prker, which allows for minimizing the wear and tear on the embedded electrodes which makes contact with slip rings at either end of the donor roll for optical switching and also as an alternative arrangement.

With respect to claim 26, Oshino et al. and Prker teaches all that is claimed as discussed in the above rejection of claim 25 except for a thru-hole aligned with an optical path of the detection sensor. Spurr et al. teach supply spool 120 comprised of a generally cylindrical shaft containing a thru-hole where transceiver unit 330 is disposed in housing 30 located 2 centimeters away from shaft 310 (see col. 7, lines 14-27). It would be obvious to one ordinary skilled in the art to be positioned remotely enough where it does not contact the spool and continue to obtain an accurate signal.

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5. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshino, Parker and Spurr, and further in view of lima (US pat # 5,393,149).

With respect to claim 27, Oshino, Parker and Spurr teach of a detection sensor to sense the type of media on a supply roll. While Oshino, Parker and Spurr teach of a detection sensor, there is no teaching of the detection sensor being a barcode. lima teaches where detection portion is a bar code or mark 22 and rotation detection device is an optical sensor 32 configured to read the bar code or mark 22 (see col. 2, lines 10-19; col. 3, lines 43-56). It would be obvious to one ordinary skilled in the art employ the marks or bar code in the modified spool of Oshino, Parker and Spurr to provide a simple information bearing arrangement.

With respect to claim 28, While Oshino, Parker and Spurr teach a paper supply spool, there is no teaching of a control device coupled to the bar code scanner. lima teaches a control device 38 coupled to the bar code scanner or mark identification unit 36 configured to process discriminating ribbon data (col. 2, lines 10-20; col. 5, lines 25-40). It would be obvious to one ordinary skilled in the art to provide the control device of lima for identifying information about the media in response to receipt of the detection signals obtained from the mark identification unit 36.

With respect to claim 29, While Oshino, Parker and Spurr do not teach of a rotation alarm activated by a control device, lima teaches rotation sensor 34 activated by the control device 38 if rotation detection does not detect any rotations. It would be obvious to one ordinary skilled in the art to further modify Oshino et al. by using the

control device activating an alarm as taught by lima to indicate an occurrence of an operational error or emergent trouble, should it occur (see col. 5, lines 25-59).

With respect to claim 30, While Oshino, Parker and Spurr do not teach of a control device configured to calculate an amount of printable material and activate a low material alarm by the control means, lima teaches detection of the remaining amount of a portion of the ink ribbon 18 wound around spool 14 by rotation sensor 34. It would be obvious to one ordinary skilled in the art to modify Oshino, Parker and Spurr by including a sensor to determine when the ~~ink ribbon~~ <sup>media</sup> is low in order to replenish or employ the remaining unused portion of the ~~ink ribbon~~ <sup>media</sup>.

AHH  
3/10/03

### Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

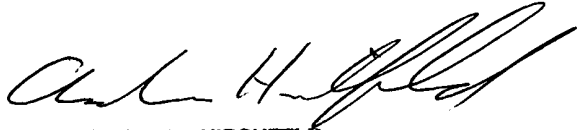
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darius N. Cone whose telephone number is (703) 308-1061. The examiner can normally be reached on 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (703) 305-6619. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-0725 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DNC

March 10, 2003

  
**ANDREW H. HIRSHFELD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**